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TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * Welcome to STN International * * * * *

NEWS	1		Web Page for STN Seminar Schedule - N. America
NEWS	2	AUG 15	CAOLD to be discontinued on December 31, 2008
NEWS	3	OCT 07	EPFULL enhanced with full implementation of EPC2000
NEWS	4	OCT 07	Multiple databases enhanced for more flexible patent number searching
NEWS	5	OCT 22	Current-awareness alert (SDI) setup and editing enhanced
NEWS	6	OCT 22	WPIDS, WPINDEX, and WPIX enhanced with Canadian PCT Applications
NEWS	7	OCT 24	CHEMLIST enhanced with intermediate list of pre-registered REACH substances
NEWS	8	NOV 21	CAS patent coverage to include exemplified prophetic substances identified in English-, French-, German-, and Japanese-language basic patents from 2004-present
NEWS	9	NOV 26	MARPAT enhanced with FSORT command
NEWS	10	NOV 26	MEDLINE year-end processing temporarily halts availability of new fully-indexed citations
NEWS	11	NOV 26	CHEMSAFE now available on STN Easy
NEWS	12	NOV 26	Two new SET commands increase convenience of STN searching
NEWS	13	DEC 01	ChemPort single article sales feature unavailable
NEWS	14	DEC 12	GBFULL now offers single source for full-text coverage of complete UK patent families
NEWS	15	DEC 17	Fifty-one pharmaceutical ingredients added to PS
NEWS EXPRESS JUNE 27 08 CURRENT WINDOWS VERSION IS V8.3, AND CURRENT DISCOVER FILE IS DATED 23 JUNE 2008.			
NEWS HOURS	STN Operating Hours Plus Help Desk Availability		
NEWS LOGIN	Welcome Banner and News Items		
NEWS IPC8	For general information regarding STN implementation of IPC 8		

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 13:20:31 ON 19 DEC 2008

=> index

ENTER FILE OR CLUSTER NAMES (NONE):

ENTER FILE OR CLUSTER NAMES (NONE):chem

'CHEM' IS AN AMBIGUOUS REFERENCE

CHEMENG	- Chemical Engineering Cluster
CHEMISTRY	- Chemical Literature Cluster
CHEMCATS	- CHEMICAL CATALOGS ONLINE 1993-to the present
CHEMINFORMRX	- The CHEMINFORMRX Reaction Search Service
CHEMLIST	- Regulated Chemicals Listing
CHEMSAFE	- CHEMSAFE - chemical safety information

ENTER A FILE OR CLUSTER NAME (IGNORE):chemistry

FILE 'ENCOMPLIT2' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

INDEX 'AGRICOLA, ALUMINIUM, ANABSTR, APOLLIT, AQUALINE, AQUIRE, BABS, BIOTECHNO, CABA, CAPLUS, CBNB, CEABA-VTB, CERAB, CIN, COMPENDEX, CONFSCI, COPPERLIT, CORROSION, DISSABS, ENCOMPLIT, GENBANK, INSPEC, INSPHYS, IPA, KOSMET, METADEX, NAPRALERT, NTIS, ...' ENTERED AT 13:20:51 ON 19 DEC 2008

39 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> file reg

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.65	0.86

FILE 'REGISTRY' ENTERED AT 13:21:06 ON 19 DEC 2008

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DICTIONARY FILE UPDATES: 18 DEC 2008 HIGHEST RN 1086785-80-9

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TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

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REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> e phthalocyanine/cn

E1 1 PHTHALOCYANINATOPLATINUM/CN

E2	1	PHTHALOCYANINATOZINC/CN
E3	1 -->	PHTHALOCYANINE/CN
E4	1	PHTHALOCYANINE 158 (LUBRICANT)/CN
E5	1	PHTHALOCYANINE ANION/CN
E6	1	PHTHALOCYANINE ANTIMONY AMIDE/CN
E7	1	PHTHALOCYANINE BLUE/CN
E8	1	PHTHALOCYANINE BLUE 01216/CN
E9	1	PHTHALOCYANINE BLUE 15570/CN
E10	1	PHTHALOCYANINE BLUE 15:3/CN
E11	1	PHTHALOCYANINE BLUE 4044/CN
E12	1	PHTHALOCYANINE BLUE 417D/CN

=> e

E13	1	PHTHALOCYANINE BLUE 4920/CN
E14	1	PHTHALOCYANINE BLUE 4982/CN
E15	1	PHTHALOCYANINE BLUE 5240K/CN
E16	1	PHTHALOCYANINE BLUE AFT 9650/CN
E17	1	PHTHALOCYANINE BLUE AFT 977/CN
E18	1	PHTHALOCYANINE BLUE B/CN
E19	1	PHTHALOCYANINE BLUE BGS/CN
E20	1	PHTHALOCYANINE BLUE BT 465D/CN
E21	1	PHTHALOCYANINE BLUE FG/CN
E22	1	PHTHALOCYANINE BLUE G/CN
E23	1	PHTHALOCYANINE BLUE GNO/CN
E24	1	PHTHALOCYANINE BLUE PP/CN

=> e

E25	1	PHTHALOCYANINE BLUE PRN/CN
E26	1	PHTHALOCYANINE BLUE SG/CN
E27	1	PHTHALOCYANINE BLUE T/CN
E28	1	PHTHALOCYANINE BLUE WDB 4675/CN
E29	1	PHTHALOCYANINE BLUE ZC 907/CN
E30	1	PHTHALOCYANINE BRILLIANT GREEN/CN
E31	1	PHTHALOCYANINE COBALT/CN
E32	1	PHTHALOCYANINE COBALT COMPLEX/CN
E33	1	PHTHALOCYANINE CONJUGATE DIACID/CN
E34	1	PHTHALOCYANINE DIANION/CN
E35	1	PHTHALOCYANINE DYE 1051/CN
E36	1	PHTHALOCYANINE GREEN/CN

=> e

E37	1	PHTHALOCYANINE GREEN 2724/CN
E38	1	PHTHALOCYANINE GREEN 2GN/CN
E39	1	PHTHALOCYANINE GREEN 2GNL/CN
E40	1	PHTHALOCYANINE GREEN 6G/CN
E41	1	PHTHALOCYANINE GREEN 6YK/CN
E42	1	PHTHALOCYANINE GREEN 6ZH/CN
E43	1	PHTHALOCYANINE GREEN BS/CN
E44	1	PHTHALOCYANINE GREEN G/CN
E45	1	PHTHALOCYANINE GREEN GTP/CN
E46	1	PHTHALOCYANINE GREEN LX/CN
E47	1	PHTHALOCYANINE GREEN NY/CN
E48	1	PHTHALOCYANINE GREEN SAX/CN

=> e

E49	1	PHTHALOCYANINE GREEN V/CN
E50	1	PHTHALOCYANINE GREEN VFT 1080/CN
E51	1	PHTHALOCYANINE GREEN WDG 47/CN
E52	1	PHTHALOCYANINE IRON/CN
E53	1	PHTHALOCYANINE LIGHT BLUE VK/CN

E54	1	PHTHALOCYANINE LIGHT FAST YELLOW/CN
E55	1	PHTHALOCYANINE LIGHT FAST YELLOW 4K/CN
E56	1	PHTHALOCYANINE POLYMER/CN
E57	1	PHTHALOCYANINE PV FAST ORANGE/CN
E58	1	PHTHALOCYANINE RADICAL ANION/CN
E59	1	PHTHALOCYANINE RADICAL CATION/CN
E60	1	PHTHALOCYANINE RADICAL ION(1-)/CN

=> e

E61	1	PHTHALOCYANINE RED/CN
E62	1	PHTHALOCYANINE TETRASULFONIC ACID TETRASODIUM SALT COPPER COMPLEX/CN
E63	1	PHTHALOCYANINE TURQUOISE BLUE/CN
E64	1	PHTHALOCYANINE VIOLET/CN
E65	1	PHTHALOCYANINE, ((6-(P-(1-ANTHRAQUINONYLCARBAMOYL)PHENYL)-S-TRIAZINE-2,4-DIYL)DIIMINO)DI-/CN
E66	1	PHTHALOCYANINE, (2-CHLOROACETAMIDOMETHYL)-, CU DERIV./CN
E67	1	PHTHALOCYANINE, (ACETOACETAMIDOMETHYL)-, CU DERIV./CN
E68	1	PHTHALOCYANINE, (BROMOMETHYL)-, CU DERIV./CN
E69	1	PHTHALOCYANINE, (CHLOROMETHYL)-/CN
E70	1	PHTHALOCYANINE, (CHLOROMETHYL)-, CU DERIV./CN
E71	1	PHTHALOCYANINE, (PHENYLSULFONYL)-, CO DERIV./CN
E72	1	PHTHALOCYANINE, , -BIS(DODECYLOXY)-14,15-BIS(2-(2-(2-METHOXYETHOXY)ETHOXY)ETHOXY)-/CN

=> e

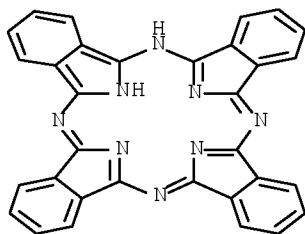
E73	1	PHTHALOCYANINE, 10-PROPOXY-/CN
E74	1	PHTHALOCYANINE, 12,13-BIS((4-(1,1-DIMETHYLETHYL)PHENYL)THIO)-/CN
E75	1	PHTHALOCYANINE, 14,15-DIHEXADECYL-, -BIS(HEXADECYLOXY)-, -BIS(2-(2-(2-METHOXYETHOXY)ETHOXY)ETHOXY)-/CN
E76	1	PHTHALOCYANINE, 2,10,16,24-TETRAKIS(TRIMETHYLSILYL)-/CN
E77	1	PHTHALOCYANINE, 2,3-BIS(2-(2-METHOXYETHOXY)ETHOXY)-/CN
E78	1	PHTHALOCYANINE, 2,3-DICHLORO-4-((4-METHYLPENTYL)OXY)-/CN
E79	1	PHTHALOCYANINE, 2,5-BIS(4-(HEXYLOXY)PHENOXY)-/CN
E80	1	PHTHALOCYANINE, 20,23,25,28-TETRAOCTYL-12-(4-(TRICHLOROSILYL)BUTOXY)-/CN
E81	1	PHTHALOCYANINE, 4,4',4'',4'''-TETRAMETHOXY-, CO DERIV./CN
E82	1	PHTHALOCYANINE, 4-(DODECYLOXY)-5-(2-(2-(2-METHOXYETHOXY)ETHOXY)ETHOXY)-/CN
E83	1	PHTHALOCYANINE, 5,6-BIS(DODECYLOXY)-, -BIS(2-(2-(2-METHOXYETHOXY)ETHOXY)ETHOXY)-/CN
E84	1	PHTHALOCYANINE, 5,6-BIS(HEXYLTHIO)-, CONJUGATE ACID (1:2)/CN

=> s e3

L1	1	PHTHALOCYANINE/CN
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=> d scan

L1	1	ANSWERS	REGISTRY	COPYRIGHT 2008 ACS on STN
IN		29H,31H-Phthalocyanine		
MF		C32 H18 N8		
CI		COM, RPS		



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> file capl

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

6.53

7.39

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FILE COVERS 1907 - 19 Dec 2008 VOL 149 ISS 26

FILE LAST UPDATED: 18 Dec 2008 (20081218/ED)

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=> s l1

L2 8782 L1

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

1.44

8.83

FILE 'REGISTRY' ENTERED AT 13:24:15 ON 19 DEC 2008

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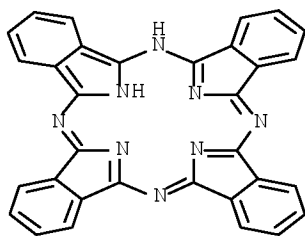
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=> d l1 1 ide

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2008 ACS on STN
RN 574-93-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN 29H,31H-Phthalocyanine (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Phthalocyanine (8CI)
OTHER NAMES:
CN χ -Phthalocyanine
CN 29H,30H-Tetrabenzob[b,g,l,q]porphine
CN 5,28:14,19-Diimino-7,12:26,21-
dinitrilotetrabenzoc[c,h,m,r][1,6,11,16]tetraazacycloeicosine
CN 8120S
CN Blue Pigment B
CN C.I. 74100
CN C.I. Pigment Blue 16
CN CG 1-1
CN Fastogen Blue 8110
CN Fastogen Blue 8120
CN Fastogen Blue 8120B
CN Fastogen Blue 8120BS
CN Fastogen Blue GS
CN Heliogen Blue 7560
CN Heliogen Blue 7800
CN Heliogen Blue D 7490
CN Heliogen Blue D 7560
CN Heliogen Blue D 7565
CN Heliogen Blue G
CN Heliogen Blue L 7460
CN Heliogen Blue L 7560
CN Heliogen Blue LG
CN Irgalite Blue GLS
CN Irgazin Blue 3GT
CN Lionol Blue KW
CN Liophoton

CN Liophoton THP
 CN Liophoton TPA 891
 CN MCP 80
 CN Monastral Fast Blue G
 CN Monolite Fast Blue GS
 CN NA 570
 CN PB 16
 CN Photo Fine TPA 891
 CN Pigment Blue 16
 CN Pigment Blue Green Phthalocyanine U
 CN Polymon Blue G
 CN Progen I
 CN PV-Fast Blue G
 CN Tetrabenzoporphyrzine
 CN Tetrabenzotetraazaporphine
 CN Tetrabenzo[b,g,l,q]porphine
 CN Tetrabenzo[b,g,l,q]porphyrazine
 CN TPA 891
 CN Vulcafor Fast Blue G
 CN Vulcanosine Fast Bremen Blue G
 CN Vynamon Blue G
 DR 889688-86-2, 162831-66-5, 2612-54-6, 81612-16-0, 4466-64-2, 52440-51-4
 MF C32 H18 N8
 CI COM, RPS
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO,
 CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST,
 CIN, CSCHEM, CSNB, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,
 GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MSDS-OHS, PIRA, PROMT,
 SPECINFO, TOXCENTER, TULSA, USPAT2, USPATFULL, USPATOLD
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
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PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

8775 REFERENCES IN FILE CA (1907 TO DATE)
 3107 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 8782 REFERENCES IN FILE CAPLUS (1907 TO DATE)
 8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> file capl
 COST IN U.S. DOLLARS
 FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
2.46	11.29

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```
=> s l1 and metal
      8782 L1
      1888457 METAL
      940767 METALS
      2286478 METAL
              (METAL OR METALS)
L3      3519 L1 AND METAL

=> s l3/prep
      8782 L1
      0 METAL/CT
      4691145 PREP/RL
      0 METAL/PREP
              (METAL/CT (L) PREP/RL)
L4      0 (L1 AND METAL/PREP)

=> s l1/prep
      8782 L1
      4691145 PREP/RL
L5      998 L1/PREP
              (L1 (L) PREP/RL)

=> s l5 and phthalonitrile
      2233 PHTHALONITRILE
      340 PHTHALONITRILES
      2328 PHTHALONITRILE
              (PHTHALONITRILE OR PHTHALONITRILES)
L6      156 L5 AND PHTHALONITRILE

=> d l6 and alkoxy
'AND' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'
'ALKOXY' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'
```


The following are valid formats:

ABS ----- GI and AB
ALL ----- BIB, AB, IND, RE
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
CLASS ----- IPC, NCL, ECLA, FTERM
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing data
IPC ----- International Patent Classifications
MAX ----- ALL, plus Patent FAM, RE
PATS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
SCAN must be entered on the same line as the DISPLAY,
e.g., D SCAN or DISPLAY SCAN)
STD ----- BIB, CLASS

IABS ----- ABS, indented with text labels
IALL ----- ALL, indented with text labels
IBIB ----- BIB, indented with text labels
IMAX ----- MAX, indented with text labels
ISTD ----- STD, indented with text labels

OBIB ----- AN, plus Bibliographic Data (original)
OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations
SIBIB ----- IBIB, no citations

HIT ----- Fields containing hit terms
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
containing hit terms
HITRN ----- HIT RN and its text modification
HITSTR ----- HIT RN, its text modification, its CA index name, and
its structure diagram
HITSEQ ----- HIT RN, its text modification, its CA index name, its
structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
structure diagram, plus NTE and SEQ fields
KWIC ----- Hit term plus 20 words on either side
OCC ----- Number of occurrence of hit term and field in which it occurs

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ENTER DISPLAY FORMAT (BIB):end

=> s 15 and alkoxy

125108 ALKOXY

7 ALKOXIES

125114 ALKOXY

(ALKOXY OR ALKOXIES)

L7 25 L5 AND ALKOXY

=> d scan ti hit

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN

TI Gamma- or modified gamma metal-free phthalocyanines

IT 91-15-6 1313-82-2, uses and miscellaneous 3001-72-7 3468-11-9

6674-22-2 22780-52-5D, alkoxy derivs. 51301-54-3

RL: USES (Uses)

(in gamma-phthalocyanine manufacture)

IT 574-93-6P

RL: PREP (Preparation)

(γ -form, manufacture of, seed crystals for)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN

TI Process and apparatus for preparing metal or nonmetal phthalocyanine without solvent

IT 574-93-6DP, Phthalocyanine, of metal or nonmetal phthalocyanine

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of metal or nonmetal phthalocyanine)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN

TI Near-IR absorbent for electrophotographic toner and electrophotographic toner containing same

IT 132-16-1DP, reaction products with 2,3 fused 1,4-benzothiazines, derivs.

with 2-aminoalkyl sulfophenyls 147-14-8DP, reaction products with 2,3

fused 1,4-benzothiazines, derivs. with 2-aminoalkyl sulfophenyls

147-14-8DP, reaction products with 2,3 fused 1,4-benzothiazines, derivs.

with 2-aminoalkyl sulfophenyls, chloro and fluoro 147-14-8DP, reaction

products with 2,3 fused 1,4-benzothiazines, derivs. with chloro and

2-aminoalkyl sulfophenyls 574-93-6DP, 29H,31H-Phthalocyanine,

reaction products with 2,3 fused 1,4-benzothiazines, derivs. with

2-aminoalkyl sulfophenyls 3317-67-7DP, reaction products with 2,3 fused

1,4-benzothiazines, derivs. with 2-aminoalkyl sulfophenyls 13930-88-6DP,

reaction products with 2,3 fused 1,4-benzothiazines, derivs. with

2-aminoalkyl sulfophenyls 14154-42-8DP, reaction products with 2,3 fused

1,4-benzothiazines, derivs. with 2-aminoalkyl sulfophenyls 14320-04-8DP,

reaction products with 2,3 fused 1,4-benzothiazines, derivs. with

2-aminoalkyl sulfophenyls 20909-39-1DP, reaction products with 2,3 fused

1,4-benzothiazines, derivs. with 2-aminoalkyl sulfophenyls 26201-32-1DP,

reaction products with 2,3 fused 1,4-benzothiazines, derivs. with

2-aminoalkyl sulfophenyls

RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM

(Technical or engineered material use); PREP (Preparation); USES

(Uses)

(electrophotog. toner containing phthalocyanine aminothiophenol derivs. as near-IR absorbent)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Method for producing 1,3-diiminoisoindoline derivatives
IT 574-93-6DP, Phthalocyanine, derivs.
RL: PNU (Preparation, unclassified); PREP (Preparation)
(preparation of 1,3-diiminoisoindoline derivs. as coloring components for thermal recording materials and precursors of phthalocyanines)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Electrophotographic photoreceptor containing poly-N-vinylcarbazole and hydrazone for optical printers
IT 574-93-6P, Phthalocyanine 23627-89-6P, Naphthalocyanine 26201-32-1P, Titanylphthalocyanine 68105-27-1P 136424-43-6P
RL: PREP (Preparation)
(preparation of, as charge-generating material for electrophotog. photoreceptor)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Monolayer-forming substituted phthalocyanine compounds
IT 574-93-6P, 29H,31H-Phthalocyanine 77474-65-8P 83484-76-8DP, bismuth complex 83484-76-8P 91083-54-4P 93530-42-8P 93530-45-1P 93530-46-2P 93530-47-3P 93530-48-4P 93530-49-5P 93530-50-8P 103696-21-5P 103714-74-5P 103804-66-6P
RL: PREP (Preparation)
(preparation of, as monolayer-forming semiconductor films)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Eta or modified eta metal-free phthalocyanines
IT 91-15-6 3001-72-7 3468-11-9 6674-22-2 22780-52-5D, alkoxy derivs. 25566-72-7 27755-14-2 40795-63-9 51301-54-3
RL: USES (Uses)
(in eta-phthalocyanine manufacture)
IT 574-93-6P
RL: PREP (Preparation)
(η -form, manufacture of)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Phthalocyanine synthesis in ionic liquids: Preparation of differently substituted phthalocyanines in tetrabutylammonium bromide
IT Substitution reaction, nucleophilic
(preparation of alkoxy and phenoxy phthalonitrile derivs. by nucleophilic substitution reaction using phthalonitriles and alcs., phenol, alkyl bromide, mercapto alkanes as reactants and molten tetrabutylammonium bromide (ionic liquid) as solvent)
IT Alcohols, reactions
Thiols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of alkoxy and phenoxy phthalonitrile derivs. by nucleophilic substitution reaction using phthalonitriles and alcs., phenol, alkyl bromide, mercapto alkanes as reactants and molten tetrabutylammonium bromide (ionic liquid) as solvent)

IT 108-95-2, Phenol, reactions 111-87-5, 1-Octanol, reactions 629-04-9, Heptyl bromide 4733-50-0, 3,6-Dihydroxyphthalonitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of alkoxy and phenoxy phthalonitrile derivs. by nucleophilic substitution reaction using phthalonitrile derivs. and alcs., phenol, or alkyl bromide as starting materials and molten tetrabutylammonium bromide (ionic liquid) as solvent)

IT 106144-21-2P, 4-Octoxy-1,2-benzenedicarbonitrile
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of alkoxy and phenoxy phthalonitrile derivs. by nucleophilic substitution reaction using phthalonitrile derivs. and alcs., phenol, or alkyl bromide as starting materials and molten tetrabutylammonium bromide (ionic liquid) as solvent)

IT 116453-85-1P 147699-63-6P, 4,5-Diphenoxypthalonitrile 696614-51-4P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of alkoxy and phenoxy phthalonitrile derivs. by nucleophilic substitution reaction using phthalonitrile derivs. and alcs., phenol, or alkyl bromide as starting materials and molten tetrabutylammonium bromide (ionic liquid) as solvent)

IT 574-93-6DP, Phthalocyanine, derivs. 140141-44-2P 140161-62-2P 165284-84-4P 177991-94-5P 439812-66-5P 858675-24-8P 858675-25-9P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of phthalocyanine derivs. by cyclization using phthalonitrile derivs. as reactants and molten tetrabutylammonium bromide (ionic liquid) as solvent)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
 TI Electrophotographic photoreceptor using tetraazaporphyrin derivatives
 IT 147-14-8P 574-93-6P, 29H,31H-Phthalocyanine 1661-03-6P 24724-50-3P 26201-32-1P 54398-42-4P 75069-95-3P 75087-14-8P 108187-01-5P 265654-33-9P 288847-46-1P 288847-47-2P 288850-86-2P 288850-87-3P 288850-88-4P 288850-89-5P 288850-90-8P 288850-91-9P 288850-92-0P 288850-93-1P
 RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (electrophotog. photoreceptor containing tetraazaporphyrin compds. as charge-generating agent)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
 TI Preparation of phthalonitrile compounds as phthalocyanine intermediates
 IT 574-93-6P, Phthalocyanine
 RL: PNU (Preparation, unclassified); PREP (Preparation)
 (preparation of phthalonitriles as phthalocyanine intermediates from nitrophthalonitrile and dithiocarbamates)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
 TI Process for preparation of silicon-phthalocyanine compounds by reaction of diiminoisoidolines with silicon tetrachloride
 IT 574-93-6DP, Phthalocyanine, silicon dihydroxide complexes 19333-15-4P 85214-70-6P 92396-90-2P 152248-88-9P 154293-21-7P 158989-00-5P 159539-84-1P 159539-85-2P 159539-86-3P 159539-87-4P 159539-88-5P 159539-89-6P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(process for preparation of silicon-phthalocyanine compds. by reaction of diiminoisoindolines with silicon tetrachloride in presence of DBU)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Electrophotographic photoreceptors using phthalocyanine derivative and hydrazone-containing styrene copolymer
IT 574-93-6P, Phthalocyanine 23627-89-6P
RL: PREP (Preparation)
(preparation of, charge-generating agent, electrophotog. photoreceptor using, with titanyl phthalocyanine)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Hydrazone compounds for electrophotographic photoreceptors
IT 574-93-6P, Phthalocyanine 92888-89-6P 96222-86-5P
103079-12-5P 103079-13-6P 103079-14-7P 106200-80-0P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of, for photoreceptor photoconductive coatings)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Dye-containing hardenable material composition with azaporphyrin for manufacturing color filters for optical imaging device
IT 574-93-6DP, Phthalocyanine, aza containing alkoxy amino sulfonyl substituted copper complexes 7440-50-8DP, Copper, complex with phthalocyanine, aza containing, sulfonyl amino alkyl substituted
852162-90-4P 852162-92-6P 852162-94-8P 852162-96-0P 852162-98-2P
852163-00-9P 852163-02-1P 852163-04-3P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(azaporphyrin in hardenable material composition)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Preparation of metallocyclopentadienyl derivatives of phthalocyanine for use in optical information storage applications
IT 574-93-6DP, Phthalocyanine, derivs. 821867-96-3P 821868-11-5P
821868-44-4P 821868-84-2P 821869-11-8P 821869-27-6P 821869-35-6P
821869-58-3P 821869-82-3P 821869-96-9P 821870-11-5P 821870-29-5P
821870-51-3P 821870-66-0P 821870-81-9P 821870-97-7P 821871-05-0P
821871-20-9P 821871-35-6P 821871-50-5P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of phenylmetallocyclopentadienyl phthalocyanine derivs. for optical information storage)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Purification of alkoxyphthalocyanine derivatives
IT 574-93-6DP, Phthalocyanine, alkoxy derivs.
216018-34-7DP, brominated 216018-35-8P 216018-36-9P
RL: PUR (Purification or recovery); PREP (Preparation)

(dissoln. in organic solvents and adsorption onto silica gels in
purification
of alkoxyphthalocyanine derivs.)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L7 25 ANSWERS CAPLUS COPYRIGHT 2008 ACS on STN
TI Production of metal-free phthalocyanines.
IT 574-93-6DP, Phthalocyanine, chloro derivs. 574-93-6P,
Phthalocyanine
RL: IMF (Industrial manufacture); PREP (Preparation)
(production of metal-free phthalocyanines)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s l1 and metal-containing

8782 L1
1888457 METAL
940767 METALS
2286478 METAL
(METAL OR METALS)
696577 CONTAINING
3 CONTAININGS
696580 CONTAINING
(CONTAINING OR CONTAININGS)
4290904 CONTG
38 CONTGS
4290916 CONTG
(CONTG OR CONTGS)
4493882 CONTAINING
(CONTAINING OR CONTG)
22430 METAL-CONTAINING
(METAL(W)CONTAINING)

L8 79 L1 AND METAL-CONTAINING

=> s l8/prep

8782 L1
0 METAL-CONTAINING/CT
4691145 PREP/RL
0 METAL-CONTAINING/PREP
(METAL-CONTAINING/CT (L) PREP/RL)

L9 0 (L1 AND METAL-CONTAINING/PREP)

=> s l8 and phthalonitrile

2233 PHTHALONITRILE
340 PHTHALONITRILES
2328 PHTHALONITRILE
(PHTHALONITRILE OR PHTHALONITRILES)

L10 6 L8 AND PHTHALONITRILE

=> s l8 and (phthalonitrile OR "1,2-Benzenedicarbonitrile" OR "1,2-Dicyanobenzene"
OR "Phthalodinitrile")

2233 PHTHALONITRILE
340 PHTHALONITRILES
2328 PHTHALONITRILE
(PHTHALONITRILE OR PHTHALONITRILES)
9930505 "1"
9870720 "2"
778 "BENZENEDICARBONITRILE"
28 "BENZENEDICARBONITRILES"

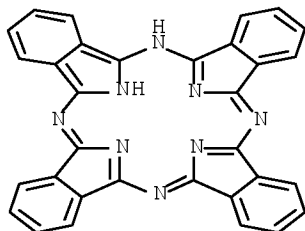
786 "BENZENEDICARBONITRILE"
 ("BENZENEDICARBONITRILE" OR "BENZENEDICARBONITRILES")
 453 "1,2-BENZENEDICARBONITRILE"
 ("1" (W) "2" (W) "BENZENEDICARBONITRILE")
 9930505 "1"
 9870720 "2"
 1388 "DICYANO BENZENE"
 136 "DICYANO BENZENES"
 1447 "DICYANO BENZENE"
 ("DICYANO BENZENE" OR "DICYANO BENZENES")
 353 "1,2-DICYANO BENZENE"
 ("1" (W) "2" (W) "DICYANO BENZENE")
 531 "PHTHALODINITRILE"
 44 "PHTHALODINITRILES"
 550 "PHTHALODINITRILE"
 ("PHTHALODINITRILE" OR "PHTHALODINITRILES")
 L11 7 L8 AND (PHTHALONITRILE OR "1,2-BENZENEDICARBONITRILE" OR "1,2-DI
 CYANO BENZENE" OR "PHTHALODINITRILE")

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L11 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:992382 CAPLUS Full-text
 DOCUMENT NUMBER: 147:156524
 TITLE: Low-temperature synthesis of phthalocyanine and its
 metal complexes
 AUTHOR(S): Kharisov, B. I.; Ortiz Mendez, U.; Rivera de la Rosa,
 J.
 CORPORATE SOURCE: Institute of Physical Chemistry, Russian Academy of
 Sciences, Moscow, 119991, Russia
 SOURCE: Russian Journal of Coordination Chemistry (2006),
 32(9), 617-631
 CODEN: RJCCEY; ISSN: 1070-3284
 PUBLISHER: Pleiades Publishing, Inc.
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 147:156524

AB Conditions for synthesizing unsubstituted phthalocyanine and its metal
 complexes from phthalonitrile at low temps. (0-50°) are optimized.
 Phthalocyanine and phthalocyaninates are produced under these conditions using
 activated Rieke metals, metals on inert substrate, sources of soluble metals
 as unstable metal complexes, zeolites, solid-phase electrosynthesis of
 phthalonitrile, and UV irradiation The use of pyrophoric metals is the most
 efficient due to a large number of defects in their structure favoring the
 initial stage of phthalonitrile cyclization on a metal matrix. The suggested
 mechanism of formation of phthalocyanine macrocycle assumes participation of
 metal agglomerates occurring in activated metals.
 IT Zeolites (synthetic), reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (metal containing; for low-temperature preparation of metal
 phthalocyaninates)
 IT 147-14-8P, Phthalocyaninatocopper 574-93-6P, Phthalocyanine
 1661-03-6P, Phthalocyaninatomagnesium 14055-02-8P 14320-04-8P,
 Phthalocyaninatozinc 15187-16-3P, Phthalocyaninatolead 21328-74-5P,
 Phthalocyaninatocadmium
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (optimization of low-temperature preparation of)
 IT 91-15-6, Phthalonitrile 7439-95-4, Magnesium, reactions
 7440-02-0, Nickel, reactions 7440-43-9, Cadmium, reactions 7440-50-8,
 Copper, reactions 7440-66-6, Zinc, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for low-temperature preparation of metal phthalocyaninate)
 IT 574-93-6P, Phthalocyanine
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (optimization of low-temperature preparation of)
 RN 574-93-6 CAPLUS
 CN 29H,31H-Phthalocyanine (CA INDEX NAME)



REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L11 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:1014304 CAPLUS Full-text
 DOCUMENT NUMBER: 142:8099
 TITLE: Substituted phthalocyanine compounds with excellent solubility, color tone, and fastness, their preparation, inks from them, and ink-jet recording method using them
 INVENTOR(S): Tateishi, Keiichi; Tanaka, Shigeaki
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 59 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004331734	A	20041125	JP 2003-126442	20030501
PRIORITY APPLN. INFO.:			JP 2003-126442	20030501
OTHER SOURCE(S):		MARPAT 142:8099		

AB The compds. $\text{MPC}(\text{SO}_2\text{L}_1\text{R}_1)_k(\text{SO}_2\text{L}_2\text{R}_2)_m\text{R}_3^n$ [A; M = H, metal, oxide, hydroxide, halogenated compound; M-Pc = phthalocyanine core with valence of (k + m + n); L_{1,2} = divalent linking group; R_{1,2} = substituent; R₃ = H, substituent; ≥ 1 of R₁₋₃ = ionic hydrophilic group; k, n > 0 but < 16; m ≥ 0 but < 16; k + m + n = 16] are prepared by reacting (SO₂L₁R₁)_q-containing cyclic compds. (q = 1-2; L₁, R₁ = same as above), (SO₂L₂R₃)_p-containing cyclic compds. (p = 1-4; L₂, R₂ = same as above), and/or R₃_r-containing cyclic compds. (r = 0-4; R₃ = same as above) and metal derivs. MX_d (M = same as above; X = mono- or divalent ligand; d = 0-4) in buffers from alkali metal-containing (organic) bases and acids. Thus, a storage-stable ink containing a Cu phthalocyanine dye mixture (A; M = Cu; L₁ = (CH₂)₃; R₁ = SO₃Li; R₃ = H; k = 3; m = 0; n = 1) prepared from 4-

nitrophthalimide and o-phthalonitrile gave an image with good water, light, and ozone resistance.

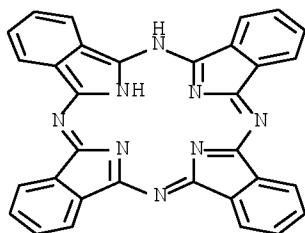
IT 147-14-8D, Copper phthalocyanine, derivs. 574-93-6D, Phthalocyanine, derivs.
 RL: TEM (Technical or engineered material use); USES (Uses)
 (cyan dye; preparation of substituted phthalocyanine dyes for ink-jet inks with good storage stability and light, water, and ozone resistance)

IT 89-40-7, 4-Nitrophthalimide 91-15-6, o-Phthalonitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (for dye preparation; preparation of substituted phthalocyanine dyes for ink-jet inks with good storage stability and light, water, and ozone resistance)

IT 574-93-6D, Phthalocyanine, derivs.
 RL: TEM (Technical or engineered material use); USES (Uses)
 (cyan dye; preparation of substituted phthalocyanine dyes for ink-jet inks with good storage stability and light, water, and ozone resistance)

RN 574-93-6 CAPLUS

CN 29H,31H-Phthalocyanine (CA INDEX NAME)



L11 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1992:48861 CAPLUS Full-text

DOCUMENT NUMBER: 116:48861

ORIGINAL REFERENCE NO.: 116:8287a,8290a

TITLE: Electrophotographic photoconductors

INVENTOR(S): Matsui, Naoyuki; Goto, Tomohisa

PATENT ASSIGNEE(S): NEC Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 03166547	A	19910718	JP 1989-304920	19891127
PRIORITY APPLN. INFO.:			JP 1989-304920	19891127

AB Title photoconductors have a photosensitive layer contg. hydrazones I, butadienes II, and oxadiazoles III (R1 = H, alkyl, alkoxy, halo, amino, morpholino, piperidino, carbazolyl; R2 = H, alkyl, alkoxy, aralkyloxy, R3-4 = H, alkyl, aryl, aralkyl, pyridyl, pyrrolidinyl, carbazolyl; R5-6 = alkyl; R9-10 = H, alkyl, acyl, cycloalkyl). The photoconductors may contain charge-generating agents of ≤50 parts metal-free or metal-containing (substituted) phthalocyanines or naphthalocyanines or their aza analogs, and 100 parts titanyle phthalocyanine, and are in crystalline form having characteristic IR

peaks at 1490±2 cm⁻¹, 1415±2 cm⁻¹, 1332±2 cm⁻¹, 1119±2 cm⁻¹, 1072±2 cm⁻¹, 1060±2 cm⁻¹, 961±2 cm⁻¹, 893±2 cm⁻¹, 780±2 cm⁻¹, 751±2 cm⁻¹, and 730±2 cm⁻¹, and contain charge-transporting agents I, II and III. Thus, titanyl phthalocyanine was prepared by reaction of 20.4 parts o-phthalodinitrile and 7.6 parts TiCl₄. A nonmetal phthalocyanine was prepared by heating aminoisindolenine in quinoline. A uniform mixture of 1 part titanyl phthalocyanine with 0.05 part nonmetal phthalocyanine was prepared by precipitation from H₂SO₄/water/THF. An Al-coated polyester film was coated with a charge-generating layer containing the phthalocyanine mixture and poly(vinyl butyral), and then with a charge-transporting layer containing p-diethylaminobenzaldehyde diphenylhydrazone 20, 1,1-bis(p-diethylaminophenyl)-4,4-diphenyl-1,3-butadiene 60, 2,5-bis(4-diethylaminophenyl)-1,3,4-oxadiazole 20, and polycarbonate 100 parts. Obtained photoconductor was chargeable to 730 V, and showed initial dark decay to 90%, sensitivity (lux-s required for half decay of voltage) 0.5, and residual voltage 70 V. After 1000 charging-photodischarging cycles, the photoconductor was chargeable to 700 V, dark decay to 88%, and residual voltage 70 V.

IT 574-93-6, Phthalocyanine 23627-89-6, Naphthalocyanine
26201-32-1, Titanyl phthalocyanine

RL: USES (Uses)

(electrophotog. photoconductor containing)

IT 7550-45-0, Titanium tetrachloride, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with phthalodinitrile, charge-generating agents
for electrophotog. photoconductors from)

IT 91-15-6, 1,2-Benzenedicarbonitrile

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with titanium tetrachloride, charge-generating agents for
electrophotog. photoconductors from)

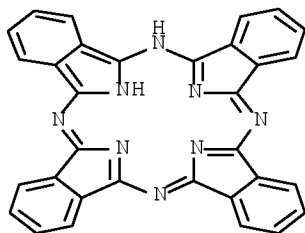
IT 574-93-6, Phthalocyanine

RL: USES (Uses)

(electrophotog. photoconductor containing)

RN 574-93-6 CAPLUS

CN 29H,31H-Phthalocyanine (CA INDEX NAME)



L11 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1976:75156 CAPLUS Full-text

DOCUMENT NUMBER: 84:75156

ORIGINAL REFERENCE NO.: 84:12347a,12350a

TITLE: Colored and thermoresistant polyoxyphenylene and its
mixes with other thermo-plastics

INVENTOR(S): Penczek, Irena; Bialy, Jan; Jaczewska, Teresa;
Rafalowicz, Teodor

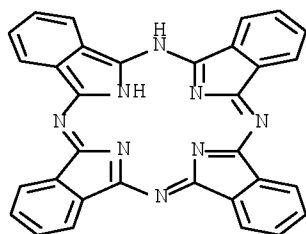
PATENT ASSIGNEE(S): Instytut Chemii Przemyslowej, Pol.

SOURCE: Pol., 3 pp.

CODEN: POXXA7

DOCUMENT TYPE: Patent
LANGUAGE: Polish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	PL 76743	A5	19750228	PL 1973-161592	19730329
PRIORITY APPLN. INFO.:				PL 1973-161592	19730329
AB	Phthalocyanines and/or phthalonitriles were used as stabilizers and dyes of polyoxyphenylene polymers containing small amts. of metals to give heat-resistant plastics. For example, poly(2,6-dimethyl-1,4-oxyphenylene) [24938-67-8] containing 0.01% Cu [7440-50-8] 100, 2-dinaphthyl-p-phenylenediamine [93-46-9] 0.5, metal-free phthalocyanine [574-93-6] 0.08, Cu phthalocyanine [147-14-8] 0.02, and Ti white 0.3 weight parts were homogenized and molded at 300° to give a green product.				
ST	copper phthalocyanine stabilizer polyoxyphenylene; polyphenylene oxide stabilizer phthalocyanine; heat resistant polyphenylene oxide; metal stabilizer polyphenylene oxide; phthalonitrile stabilizer polyphenylene oxide; dye phthalocyanine polyphenylene oxide; coloring phthalocyanine polyphenylene oxide				
IT	147-14-8 574-93-6 RL: USES (Uses) (dye-stabilizers, for copper-containing polyoxyphenylenes)				
IT	93-46-9 RL: USES (Uses) (stabilizers, containing phthalocyanines, for metal-contg . polyoxyphenylenes)				
IT	574-93-6 RL: USES (Uses) (dye-stabilizers, for copper-containing polyoxyphenylenes)				
RN	574-93-6 CAPLUS				
CN	29H,31H-Phthalocyanine (CA INDEX NAME)				



L11 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1971:127519 CAPLUS Full-text
DOCUMENT NUMBER: 74:127519
ORIGINAL REFERENCE NO.: 74:20585a,20588a
TITLE: Catalytic synthesis of metal-free phthalocyanine
AUTHOR(S): Twigg, M. V.
CORPORATE SOURCE: Erindale Coll., Univ. Toronto, Toronto, ON, Can.
SOURCE: Organic Preparations and Procedures International
(1971), 3(2), 97-8
CODEN: OPPIAK; ISSN: 0030-4948
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A mixt. of 15.2 g phthalonitrile, 1 ml cyclohexylamine, and 38 ml 1-methylnaphthalene (I) was heated at 230° for 10 hr to give 10.1 g crystalline, metal-free phthalocyanine, avoiding the need for the preparation of a metal-containing intermediate. 1-Chloronaphthalene, o-C6H4Cl2, or a similar solvent can be substituted for I.

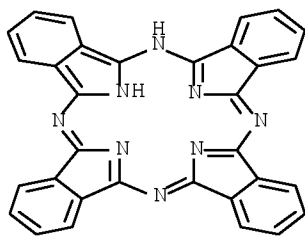
ST phthalocyanine metal-free; phthalonitrile polycondensation;
cyclohexylamine catalyst phthalocyanine; catalyst phthalocyanine prepn

IT 574-93-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(catalytic synthesis of)

IT 574-93-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(catalytic synthesis of)

RN 574-93-6 CAPLUS

CN 29H,31H-Phthalocyanine (CA INDEX NAME)



L11 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1956:46819 CAPLUS

DOCUMENT NUMBER: 50:46819

ORIGINAL REFERENCE NO.: 50:9029d-i,9030a

TITLE: Basic phthalonitrile derivatives

PATENT ASSIGNEE(S): J. R. Geigy A.-G.

DOCUMENT TYPE: Patent

LANGUAGE: Unavailable

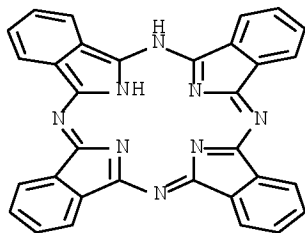
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
	GB 737413		19550928	GB 1953-4245	19530216
TI	Basic phthalonitrile derivatives				
AB	Colorless to weakly yellowish phthalonitrile (I) derivs. are converted by heat into metal-containing phthalocyanine dyes. To a 25% solution 130 of HBr in AcOH, I 12.8 parts is added at room temperature while stirring. The temperature quickly rises to 35-40° and a thicker suspension results. After a few hrs. the white precipitate is separated, washed with petr. ether, and dried in vacuo over NaOH. The product 33-35 parts, decomposing at 200-15°, has the formula C8H7N2Br3 (II) and is more stable than the known imino halides of benzene mononitriles. II 37.1 is gradually added to concentrated NH4OH 150 parts. A strong exothermic reaction takes place. After a few min. the yellow precipitate is filtered off and washed with a little H2O. From the filtrate the excess NH3 is removed to give an addnl. precipitate Combined with the above it is dried in vacuo to give C16H19O2N6Br (III) 17-19 parts. It splits off NH3 at 130-60° but decompose completely only above 300°. With triethylene glycol (IV) or thiodiethylene glycol (V) and tertiary alkanolamines in the presence of Cu salts, it prints cotton brilliant blue of excellent fastness to				

light and washing. By suspending III 20.35 in EtOH 60, adding KOH 2.85 in EtOH 40, stirring a few hrs., filtering off KBr, and reducing the volume in vacuo, the free base (VI) 12 parts remains. It gives off NH₃ at 120° and m. 160-5° (decomposition). A purer VI, m. 180-2°, can be obtained by dissolving III in H₂O at 0-2°, adding a 7% NaOH solution, and filtering after a few min. Even at steam bath temperature, VI plus Cu salts give copper phthalocyanine in organic solvents like glycol or V. To EtOH 150 saturated with NH₃, II 37.1 parts is added while cooling and the suspension is saturated with NH₃. After stirring several hrs., NaOEt 20.4 parts in EtOH is added, stirring continued, the inorg. salt filtered off, the solution evaporated in vacuo, the residue redissolved in EtOH, filtered, and evaporated again to yield a yellow compound (VII) 12-14 parts producing brilliant blue prints in the presence of Cu salts. The 4-nitro derivative of I (VIII) 17.3 is stirred several hrs. with a 29% solution of HBr in AcOH 100 to give a thick precipitate 40 parts, which is filtered, washed with petr. ether, and dried in vacuo. The product (IX) decompose at about 200-10° and has the formula C₈H₆O₂N₃Br₃. IX 41.6 is added with cooling to concentrated NH₄OH 150 parts to give a yellow-green precipitate which is filtered and washed with a little H₂O. Removing NH₃ from the filtrate gives an addnl. yield. With Cu salts in glycol at 100° it produces a green dye. Printed in the presence of Cu salts, glycol, and triethanolamine it gives a green-blue dyeing of very good fastness. VIII replaced by the 4-chloro derivative of I gives a similar dye. The product from VII is pasted with V 2.5 and triethanolamine 0.5 and mixed with copper chloride 0.1 in H₂O 1, incorporated into a 7% tragacanth solution 15 with the addition of a 60% solution of AcONH₄ 1 part to give a cotton printing paste. It produces brilliant blue dyeings after steaming 10 min., soaping, and rinsing. NiSO₄ instead of CuCl₂ produces a greener shade. The powder III is pasted with triethanolamine 0.5, V 1, and the triethanolamine salt of oleic acid 2, and mixed with a solution of copper chloride 0.1 in H₂O 1 part. This mixture, pasted as above, gives a similar shade.

IT 574-93-6, Phthalocyanine
 (derivs.)
 IT 91-15-6, Phthalonitrile
 (derivs., and phthalocyanine compds. therefrom)
 IT 17654-68-1, Phthalonitrile, 4-chloro-
 (dyes from)
 IT 574-93-6, Phthalocyanine
 (derivs.)
 RN 574-93-6 CAPLUS
 CN 29H,31H-Phthalocyanine (CA INDEX NAME)



=> s (phthalocyanine OR "29H,31H-Phthalocyanine" OR "Porphyrins")
 39709 PHTHALOCYANINE
 7469 PHTHALOCYANINES
 40559 PHTHALOCYANINE

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                (PHTHALOCYANINE OR PHTHALOCYANINES)
1150 "29H"
1184 "31H"
39709 "PHTHALOCYANINE"
7469 "PHTHALOCYANINES"
40559 "PHTHALOCYANINE"
        ("PHTHALOCYANINE" OR "PHTHALOCYANINES")
919 "29H,31H-PHTHALOCYANINE"
        ("29H" (W) "31H" (W) "PHTHALOCYANINE")
27345 "PORPHYRINS"
L12      66550 (PHTHALOCYANINE OR "29H,31H-PHTHALOCYANINE" OR "PORPHYRINS")

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=> s l12/prep
        0 PHTHALOCYANINE/CT
4691145 PREP/RL
        0 PHTHALOCYANINE/PREP
        (PHTHALOCYANINE/CT (L) PREP/RL)
        0 "29H,31H-PHTHALOCYANINE"/CT
4691145 PREP/RL
        0 "29H,31H-PHTHALOCYANINE"/PREP
        ("29H,31H-PHTHALOCYANINE"/CT (L) PREP/RL)
16446 "PORPHYRINS"/CT
4691145 PREP/RL
3028 "PORPHYRINS"/PREP
        ("PORPHYRINS"/CT (L) PREP/RL)
L13      3028 ((PHTHALOCYANINE/PREP OR "29H,31H-PHTHALOCYANINE"/PREP OR "PORPH
        YRINS"/PREP))

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=> s l13 and metal-containing
1888457 METAL
940767 METALS
2286478 METAL
        (METAL OR METALS)
696577 CONTAINING
3 CONTAININGS
696580 CONTAINING
        (CONTAINING OR CONTAININGS)
4290904 CONTG
38 CONTGS
4290916 CONTG
        (CONTG OR CONTGS)
4493882 CONTAINING
        (CONTAINING OR CONTG)
22430 METAL-CONTAINING
        (METAL (W) CONTAINING)
L14      7 L13 AND METAL-CONTAINING

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=> s l13 and (phthalonitrile OR "1,2-Benzenedicarbonitrile" OR "1,2-Dicyanobenzene"
OR "Phthalodinitrile")
2233 PHTHALONITRILE
340 PHTHALONITRILES
2328 PHTHALONITRILE
        (PHTHALONITRILE OR PHTHALONITRILES)
9930505 "1"
9870720 "2"
778 "BENZENEDICARBONITRILE"
28 "BENZENEDICARBONITRILES"
786 "BENZENEDICARBONITRILE"
        ("BENZENEDICARBONITRILE" OR "BENZENEDICARBONITRILES")
453 "1,2-BENZENEDICARBONITRILE"

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                ("1" (W) "2" (W) "BENZENEDICARBONITRILE")
9930505 "1"
9870720 "2"
    1388 "DICYANOBENZENE"
    136 "DICYANOBENZENES"
    1447 "DICYANOBENZENE"
        ("DICYANOBENZENE" OR "DICYANOBENZENES")
    353 "1,2-DICYANOBENZENE"
        ("1" (W) "2" (W) "DICYANOBENZENE")
    531 "PHTHALODINITRILE"
    44 "PHTHALODINITRILES"
    550 "PHTHALODINITRILE"
        ("PHTHALODINITRILE" OR "PHTHALODINITRILES")
L15      26 L13 AND (PHTHALONITRILE OR "1,2-BENZENEDICARBONITRILE" OR "1,2-D
        ICYANOBENZENE" OR "PHTHALODINITRILE")

=> s l13 and (phthalonitrile OR "1,2-Benzenedicarbonitrile" OR "1,2-Dicyanobenzene"
OR "Phthalodinitrile")/ract
    0 PHTHALONITRILE/CT
3206166 RACT/RL
    0 PHTHALONITRILE/RACT
        (PHTHALONITRILE/CT (L) RACT/RL)
    0 "1,2-BENZENEDICARBONITRILE"/CT
3206166 RACT/RL
    0 "1,2-BENZENEDICARBONITRILE"/RACT
        ("1,2-BENZENEDICARBONITRILE"/CT (L) RACT/RL)
    0 "1,2-DICYANOBENZENE"/CT
3206166 RACT/RL
    0 "1,2-DICYANOBENZENE"/RACT
        ("1,2-DICYANOBENZENE"/CT (L) RACT/RL)
    0 "PHTHALODINITRILE"/CT
3206166 RACT/RL
    0 "PHTHALODINITRILE"/RACT
        ("PHTHALODINITRILE"/CT (L) RACT/RL)
L16      0 L13 AND (PHTHALONITRILE OR "1,2-BENZENEDICARBONITRILE" OR "1,2-D
        ICYANOBENZENE" OR "PHTHALODINITRILE")/RACT

=> s l13 and alkoxy
    125108 ALKOXY
    7 ALKOXIES
    125114 ALKOXY
        (ALKOXY OR ALKOXIES)
L17      40 L13 AND ALKOXY

=> s l15 and alkoxy
    125108 ALKOXY
    7 ALKOXIES
    125114 ALKOXY
        (ALKOXY OR ALKOXIES)
L18      4 L15 AND ALKOXY

=> d 1-4 ibib hit hitstr abs

L18 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER:      2008:1251928 CAPLUS Full-text
DOCUMENT NUMBER:      149:474499
TITLE:                  Silicon and germanium phthalocyanines and related
                        substances as fluorescent dyes and markers for liquid
                        products
INVENTOR(S):           Gessner, Thomas; Sens, Ruediger; Ahlers, Wolfgang;

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Vamvakaris, Christos
 PATENT ASSIGNEE(S): BASF SE, Germany
 SOURCE: PCT Int. Appl., 79pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: German
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2008122531	A2	20081016	WO 2008-EP53779	20080331
W: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.: EP 2007-105776 A 20070405

OTHER SOURCE(S): MARPAT 149:474499

AB Silicon or germanium fused-ring-extended phthalocyanines are synthesized and used as tracer substances for liqs. and as markers for com. liqs. (especially fuels and petroleum products). The metallophthalocyanines are of general structure I, in which M1, M2, and M3 are Si or Ge; A, A1, A2, D, D1, D2, E, E1, E2, G, G1, and G2 are CH or N; n, m, p, and q are 0-2; $1 < n' < (4 + 2n)$, $1 < m' < (4 + 2m)$, $1 < p' < (4 + 2p)$, and $1 < q' < (4 + 2q)$; W, X, Y, Z, and R1-6, are halogen, nitro, hydroxy, cyano, amino, C1-20-alkyl, C2-20-alkenyl, C2-20-alkynyl, C3-15-cycloalkyl, aryl, heterocyclic, C1-20-alkoxy, aryloxy, C1-4-dialkylamino, C3-6-cycloalkylamino, -CO2M, -SO3M, and C1-4-dialkylsulfamoyl (M = H or alkali metal).

IT Porphyrins

RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(porphocyanins; silicon and germanium phthalocyanines and related substances as fluorescent dyes and markers for liquid products)

IT 76-86-8, Triphenylchlorosilane 91-15-6, 1,2-Benzenedicarbonitrile 995-45-9, Tri-n-butylchlorosilane 3634-67-1 18643-08-8, Octadecyldimethylchlorosilane 19333-15-4, Siliconphthalocyaninedihydroxide 52322-14-2 53175-37-4, 1-Amino-3-iminoisindoline 162578-86-1 184719-55-9, Chlorodiisopropyloctyloxy silane 859205-14-4, 3-(3-Methylpiperidino) phthalodinitrile 1071438-03-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(condensation reaction of; silicon and germanium phthalocyanines and related substances as fluorescent dyes and markers for liquid products)

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Silicon or germanium fused-ring-extended phthalocyanines are synthesized and used as tracer substances for liqs. and as markers for com. liqs. (especially

fuels and petroleum products). The metallophthalocyanines are of general structure I, in which M1, M2, and M3 are Si or Ge; A, A1, A2, D, D1, D2, E, E1, E2, G, G1, and G2 are CH or N; n, m, p, and q are 0-2; $1 < n' < (4 + 2n)$, $1 < m' < (4 + 2m)$, $1 < p' < (4 + 2p)$, and $1 < q' < (4 + 2q)$; W, X, Y, Z, and R1-6, are halogen, nitro, hydroxy, cyano, amino, C1-20-alkyl, C2-20-alkenyl, C2-20-alkynyl, C3-15-cycloalkyl, aryl, heterocyclic, C1-20-alkoxy, aryloxy, C1-4-dialkylamino, C3-6-cycloalkylamino, -CO2M, -SO3M, and C1-4-dialkylsulfamoyl (M = H or alkali metal).

L18 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:1061593 CAPLUS Full-text

DOCUMENT NUMBER: 147:385765

TITLE: Use of aryl- or alkyloxy-substituted phthalocyanines as marking substances for liquids

INVENTOR(S): Gessner, Thomas; Ebert, Sophia; Sens, Ruediger; Koennemann, Martin; Ahlers, Wolfgang; Vamvakaris, Christos

PATENT ASSIGNEE(S): Basf A.-G., Germany

SOURCE: PCT Int. Appl., 53pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007104685	A1	20070920	WO 2007-EP52122	20070307
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
AU 2007224512	A1	20070920	AU 2007-224512	20070307
EP 1996549	A1	20081203	EP 2007-726680	20070307
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR			
PRIORITY APPLN. INFO.:			EP 2006-111161	A 20060315
			WO 2007-EP52122	W 20070307

OTHER SOURCE(S): CASREACT 147:385765; MARPAT 147:385765

AB Phthalocyanines I [M = H2, Li2, Mg, Zn, Cu, Ni, VO, TiO, AlCl, Al(OAc), AlOC(:O)OCF3, SiCl2, Si(OH)2; A = (R1)r; Q = (R)n; Z = (R)m; m = 1 - 4; n = 0 - 4; r = 0 - 4; m + r = 1 - 4; n + r = 0 - 4; R = OC(CR1R1R2)(CR1R1R1), X1, X2, X3, X4, X5, adamantyl-1-oxy; R1 = H, halogen, R2; R2 = C1-18-alkyl, C4-8-cycloalkyl, C2-12-alkenyl, C2-12-alkynyl, C6-10-aryl, (un)substituted C7-20-aryl {whereby the aryl is substituted with one or more halogen, CN, NO2, OH, NH2, C1-20-alkyl (whereby the alkyl is optionally substituted with 1 - 4 O atoms), C1-20-alkoxy, C1-20-alkylamino, C1-20-dialkylamino}; E = (R3)t; R3 = R1; R3R3, R1R3 = ring system; R4, R5, R6 = H, halogen, Me, Et; Y1, Y2, Y3, Y4, Y5, Y6 = C1-4-alkylene, optionally substituted with one or more halogens; s = 0 - 6; t = 0 - 3] are suitable as marking substances for liqs., in particular mineral oils. The preparation of I comprises: cyclocondensation of

phthalodinitriles II or iminoaminoisoindolines III or IV with a reducing agent in the presence of a base in a melt.

IT Nitriles, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (dinitriles, phthalodinitriles, cyclocondensation reactions of; use of aryl- or alkyloxy-substituted phthalocyanines as marking substances for liqs.)

IT Cyclocondensation reaction
 (of phthalodinitriles or iminoisoindolines; use of aryl- or alkyloxy-substituted phthalocyanines as marking substances for liqs.)

IT Porphyrins
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (phthalocyanines; use of aryl- or alkyloxy-substituted phthalocyanines as marking substances for liqs.)

IT 166774-36-3P, 4-(1-Adamantanoxo)phthalodinitrile 214494-50-5P
 214494-53-8P, 3-(2,6-Diisopropylphenoxy)phthalodinitrile
 214494-54-9P, 3-(2,6-Diphenylphenoxy)phthalodinitrile
 651739-94-5P, 3-[2,4-Di(tert-pentyl)phenoxy]phthalodinitrile
 949586-77-0P, 3-(2,4,6-Trimethylphenoxy)phthalodinitrile
 949586-78-1P, 3-[4-(tert-Butyl)-2,6-diphenylphenoxy]phthalodinitrile
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation and cyclocondensation of; use of aryl- or alkyloxy-substituted phthalocyanines as marking substances for liqs.)

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Phthalocyanines I [M = H₂, Li₂, Mg, Zn, Cu, Ni, VO, TiO, AlCl₃, Al(OAc)₃, AlOC(:O)OCF₃, SiCl₄, Si(OH)₄; A = (R₁)_n; Q = (R)_n; Z = (R)_m; m = 1 - 4; n = 0 - 4; r = 0 - 4; m + r = 1 - 4; n + r = 0 - 4; R = OC(CR₁R₁R₂)(CR₁R₁R₁), X₁, X₂, X₃, X₄, X₅, adamantyl-1-oxy; R₁ = H, halogen, R₂; R₂ = C₁-18-alkyl, C₄-8-cycloalkyl, C₂-12-alkenyl, C₂-12-alkynyl, C₆-10-aryl, (un)substituted C₇-20-aryl (whereby the aryl is substituted with one or more halogen, CN, NO₂, OH, NH₂, C₁-20-alkyl (whereby the alkyl is optionally substituted with 1 - 4 O atoms), C₁-20-alkoxy, C₁-20-alkylamino, C₁-20-dialkylamino]; E = (R₃)_t; R₃ = R₁; R₃R₃, R₁R₃ = ring system; R₄, R₅, R₆ = H, halogen, Me, Et; Y₁, Y₂, Y₃, Y₄, Y₅, Y₆ = C₁-4-alkylene, optionally substituted with one or more halogens; s = 0 - 6; t = 0 - 3] are suitable as marking substances for liqs., in particular mineral oils. The preparation of I comprises: cyclocondensation of phthalodinitriles II or iminoaminoisoindolines III or IV with a reducing agent in the presence of a base in a melt.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2002:688155 CAPLUS Full-text
 DOCUMENT NUMBER: 137:241294
 TITLE: Preparation of calixarene-substituted phthalocyanine derivatives as inclusion compounds and process for preparation thereof
 INVENTOR(S): Kuroda, Kazuyoshi; Kobayashi, Osao
 PATENT ASSIGNEE(S): Orient Chemical Industries, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.
 CODEN: JKXXAF

DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002255968	A	20020911	JP 2001-58336	20010302
PRIORITY APPLN. INFO.:			JP 2001-58336	20010302

OTHER SOURCE(S): CASREACT 137:241294; MARPAT 137:241294

AB The title compds. [I; -X-L- represents a linkage group linked to calix[4]arene at two adjacent β -positions of the aromatic ring of the phthalocyanine; X = O, S; L = alkylene, -(CR₄R₅)q-Ar- (wherein R₄, R₅ = H, alkyl; Ar = arylene); R₁, R₂ = H, alkyl, aryl, aralkyl, halo; R₃ = HO, alkoxy, acyloxy, aralkyloxy, thiol, thioalkoxy, OCH₂(CH₂)_rCO₂R₆ (wherein R₆ = H, alkyl; r = 0-2); M = two H atom, divalent metal atom, monosubstituted trivalent atom, disubstituted tetravalent atom; n = an integer of 1-4; * represents a linkage or substitution position] are prepared by reaction of 4,5-dichlorophthalonitrile and 3-mercaptopropanol, reaction of the resulting 4,5-bis(3-hydroxypropylthio)phthalonitrile with 4-tert-butylcalix[4]arene, and cycloaddn. reaction of the resulting calix[4]arene-substituted phthalonitrile followed by separation and purification and metal complexation. These compds. are inclusion compds. which possess a high degree of substitution, high symmetry, and fixed ligands and are useful as materials for fluorescence quenchers, gas sensors, sensitizers for laser phototherapy, photoelec. transducers, nonlinear optical devices, and optical recording materials. Thus, 8.0 part 4,5-dichlorophthalonitrile and 8.6 part 3-mercaptopropanol were dissolved in 90 part DMSO, heated at 80°, treated with 90 part K₂CO₃ in 8 portions in every 5 min, and stirred at 80° for 30 min to give 58% 4,5-bis(3-hydroxypropylthio)phthalonitrile which (7.3 part) was dissolved in 19 part pyridine, treated with p-toluenesulfonyl chloride at ≤5° in an ice-water, and stirred at the same temperature for 2 h to give 61% 4,5-bis(3-tosyloxypropylthio)phthalonitrile (II). 4-Tert-butylcalix[4]arene 2.5, II 2.4, and K₂CO₃ 1.3 part were added to 6 part acetone and refluxed for 30 h to give 19.0% 4-tert-butylcalix[4]arene-substituted phthalonitrile which (100 part) and 8.3 part DBU were added to 320 part 1-pentanol and refluxed for 24 h to give 5.9% tetrakis(4-tert-butylcalix[4]arene)-substituted phthalocyanine. Fluorescence quenching property of 1,4-benzoquinone due to the inclusion complexation with various calix[4]arene-substituted phthalocyanines was examined

ST calixarene substituted phthalocyanine prepn inclusion compd; cycloaddn calixarene substituted phthalonitrile

IT Metacyclophanes

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(calixarenes; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT Photosensitizers, pharmaceutical

(for laser phototherapy; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT Optical instruments

(nonlinear; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT Cycloaddition reaction

Gas sensors

Optical recording materials

Photoelectric devices

(preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT Porphyrins
 RL: RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT Metalloporphyrins
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT Fluorescence
 (quenchers; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT 106-51-4, 1,4-Benzoquinone, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
 (inclusion complexation and fluorescence quenching of 1,4-benzoquinone; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT 459140-47-7P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (inclusion complexation and fluorescence quenching of 1,4-benzoquinone; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT 459140-19-3P 459140-40-0P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (inclusion complexation and fluorescence quenching of 1,4-benzoquinone; preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

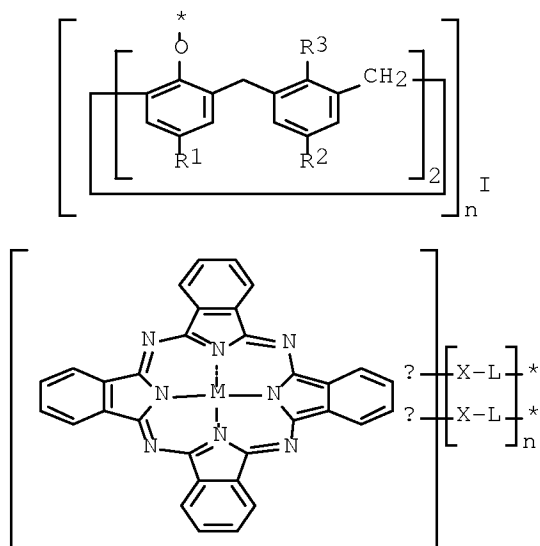
IT 457901-24-5P 457901-25-6P 459125-82-7P 459125-83-8P 459125-84-9P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT 98-59-9, p-Toluenesulfonyl chloride 7447-39-4, Copper(II) chloride, reactions 7718-54-9, Nickel chloride, reactions 19721-22-3, 3-Mercaptopropanol 32703-80-3, 4-tert-Butylphthalonitrile 60705-62-6, 4-tert-Butylcalix[4]arene 139152-08-2, 4,5-Dichlorophthalonitrile
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted phthalonitrile)

IT 457901-22-3P, 4,5-Bis(3-hydroxypropylthio)phthalonitrile 457901-23-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (preparation of calixarene-substituted phthalocyanine derivs. as inclusion compds. via cycloaddn. of calix[4]arene-substituted

phthalonitrile)

GI



AB The title compds. [I; -X-L- represents a linkage group linked to calix[4]arene at two adjacent β -positions of the aromatic ring of the phthalocyanine; X = O, S; L = alkylene, -(CR₄R₅)_q-Ar- (wherein R₄, R₅ = H, alkyl; Ar = arylene); R₁, R₂ = H, alkyl, aryl, aralkyl, halo; R₃ = HO, alkoxy, acyloxy, aralkyloxy, thiol, thioalkoxy, OCH₂(CH₂)_rCO₂R₆ (wherein R₆ = H, alkyl; r = 0-2); M = two H atom, divalent metal atom, monosubstituted trivalent atom, disubstituted tetravalent atom; n = an integer of 1-4; * represents a linkage or substitution position] are prepared by reaction of 4,5-dichlorophthalonitrile and 3-mercaptopropanol, reaction of the resulting 4,5-bis(3-hydroxypropylthio)phthalonitrile with 4-tert-butylcalix[4]arene, and cycloaddn. reaction of the resulting calix[4]arene-substituted phthalonitrile followed by separation and purification and metal complexation. These compds. are inclusion compds. which possess a high degree of substitution, high symmetry, and fixed ligands and are useful as materials for fluorescence quenchers, gas sensors, sensitizers for laser phototherapy, photoelec. transducers, nonlinear optical devices, and optical recording materials. Thus, 8.0 part 4,5-dichlorophthalonitrile and 8.6 part 3-mercaptopropanol were dissolved in 90 part DMSO, heated at 80°, treated with 90 part K₂CO₃ in 8 portions in every 5 min, and stirred at 80° for 30 min to give 58% 4,5-bis(3-hydroxypropylthio)phthalonitrile which (7.3 part) was dissolved in 19 part pyridine, treated with p-toluenesulfonyl chloride at ≤5° in an ice-water, and stirred at the same temperature for 2 h to give 61% 4,5-bis(3-tosyloxypropylthio)phthalonitrile (II). 4-Tert-butylcalix[4]arene 2.5, II 2.4, and K₂CO₃ 1.3 part were added to 6 part acetone and refluxed for 30 h to give 19.0% 4-tert-butylcalix[4]arene-substituted phthalonitrile which (100 part) and 8.3 part DBU were added to 320 part 1-pentanol and refluxed for 24 h to give 5.9% tetrakis(4-tert-butylcalix[4]arene)-substituted phthalocyanine. Fluorescence quenching property of 1,4-benzoquinone due to the inclusion complexation with various calix[4]arene-substituted phthalocyanines was examined

ACCESSION NUMBER: 1994:536221 CAPLUS Full-text

DOCUMENT NUMBER: 121:136221

ORIGINAL REFERENCE NO.: 121:24625a,24628a

TITLE: Preparation of phthalocyanine derivatives and intermediates thereof

INVENTOR(S): Fujiwara, Koji; Kudo, Masaaki; Akita, Takayuki

PATENT ASSIGNEE(S): Nihon Nohyaku Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06041137	A	19940215	JP 1993-43181	19930208
PRIORITY APPLN. INFO.:			JP 1992-56895	A1 19920208

OTHER SOURCE(S): CASREACT 121:136221; MARPAT 121:136221

AB Phthalocyanine derivs. [I; R = lower (halo)alkyl, (halo)alkoxy, or (halo)alkylthio, particularly CF₃; n = 0-4] are prepared by reaction of dichlorobenzene derivs. (II; X = Cl; R, n = same as above) with CO and inorg. ammonium salt in the presence of a Pd compound and a phosphine compound, reaction of the resulting phthalimide derivs. (III; R, n = same as above) with NH₃, treatment of the resulting phthalamide derivs. II (X = CONH₂; R, n = same as above) with P(O)Cl₃, and reaction of the resulting phthalonitriles II (X = cyano; R, n = same as above) with a metal oxide or halide in the presence of a basic catalyst. They are useful as dyes and functional materials. Thus, 3,4-dichlorobenzotrifluoride 0.18, NH₄HCO₃ 0.56, PdCl₂ 0.0018, 1,4-bis(diphenylphosphino)butane 0.09 mol, and 180 mL toluene were placed in a Hastelloy autoclave, purged three times with CO (5 kg/cm²), pressurized with CO (35 kg/cm²), and allowed to react at 200° for 3 h to give 65.6% 4-trifluoromethylphthalimide. The latter compound was stirred with 28% aqueous NH₃ at room temperature to give 82.1% 4-trifluoromethylphthalamide which was dissolved in pyridine, cooled to 5°, and treated dropwise with P(O)Cl₃ followed by heating at 60° for 2 h to give 72.8% 4-trifluoromethylphthalonitrile. The latter nitrile 0.98, SnCl₂ 0.28, and DBU 0.76 were refluxed in EtOCH₂CH₂OH for 6 h and cooled followed by adding water and filtering precipitated crystals to give 100% I (R = CF₃, n = 1, M = Sn).

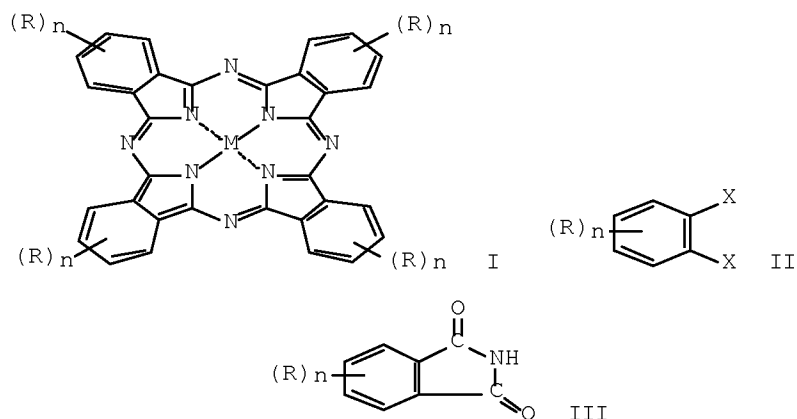
IT Cycloaddition reaction
(of phthalonitriles in presence of metal oxides or metal halides, metal phthalocyanines from)

IT Porphyrins

RL: IMF (Industrial manufacture); PREP (Preparation)

(metal complexes, preparation of, by cycloaddn. of phthalonitriles in presence of meta halides or oxides)

GI



AB Phthalocyanine derivs. [I; R = lower (halo)alkyl, (halo)alkoxy, or (halo)alkylthio, particularly CF₃; n = 0-4] are prepared by reaction of dichlorobenzene derivs. (II; X = Cl; R, n = same as above) with CO and inorg. ammonium salt in the presence of a Pd compound and a phosphine compound, reaction of the resulting phthalimide derivs. (III; R, n = same as above) with NH₃, treatment of the resulting phthalamide derivs. II (X = CONH₂; R, n = same as above) with P(O)Cl₃, and reaction of the resulting phthalonitriles II (X = cyano; R, n = same as above) with a metal oxide or halide in the presence of a basic catalyst. They are useful as dyes and functional materials. Thus, 3,4-dichlorobenzotrifluoride 0.18, NH₄HCO₃ 0.56, PdCl₂ 0.0018, 1,4-bis(diphenylphosphino)butane 0.09 mol, and 180 mL toluene were placed in a Hastelloy autoclave, purged three times with CO (5 kg/cm²), pressurized with CO (35 kg/cm²), and allowed to react at 200° for 3 h to give 65.6% 4-trifluoromethylphthalimide. The latter compound was stirred with 28% aqueous NH₃ at room temperature to give 82.1% 4-trifluoromethylphthalamide which was dissolved in pyridine, cooled to 5°, and treated dropwise with P(O)Cl₃ followed by heating at 60° for 2 h to give 72.8% 4-trifluoromethylphthalonitrile. The latter nitrile 0.98, SnCl₂ 0.28, and DBU 0.76 were refluxed in EtOCH₂CH₂OH for 6 h and cooled followed by adding water and filtering precipitated crystals to give 100% I (R = CF₃, n = 1, M = Sn).

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ENTRY	SESSION
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	ENTRY	SESSION
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)		
CA SUBSCRIBER PRICE	0.00	-8.00

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INDEX 'AGRICOLA, ALUMINIUM, ANABSTR, APOLLIT, AQUALINE, AQUIRE, BABS,
BIOTECHNO, CABA, CAPLUS, CBNB, CEABA-VTB, CERAB, CIN, COMPENDEX, CONFSCI,
COPPERLIT, CORROSION, DISSABS, ENCOMPLIT, GENBANK, INSPEC, INSPHYS, IPA,
KOSMET, METADEX, NAPRALERT, NTIS, ...' ENTERED AT 13:20:51 ON 19 DEC 2008

FILE 'REGISTRY' ENTERED AT 13:21:06 ON 19 DEC 2008
E PHTHALOCYANINE/CN

L1 1 S E3

FILE 'CAPLUS' ENTERED AT 13:22:37 ON 19 DEC 2008

L2 8782 S L1

FILE 'REGISTRY' ENTERED AT 13:24:15 ON 19 DEC 2008

FILE 'CAPLUS' ENTERED AT 13:24:33 ON 19 DEC 2008

L3 3519 S L1 AND METAL
L4 0 S L3/PREP
L5 998 S L1/PREP
L6 156 S L5 AND PHTHALONITRILE
L7 25 S L5 AND ALKOXY
L8 79 S L1 AND METAL-CONTAINING
L9 0 S L8/PREP
L10 6 S L8 AND PHTHALONITRILE
SET LINE 250
SET DETAIL OFF
E PHTHALONITRILE+ALL/CT
SET LINE LOGIN
SET DETAIL LOGIN


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L11          7 S L8 AND (PHTHALONITRILE OR "1,2-BENZENEDICARBONITRILE" OR "1,2
              SET LINE 250
              SET DETAIL OFF
              E PHTHALOCYANINE+ALL/CT
              SET LINE LOGIN
              SET DETAIL LOGIN
L12          66550 S (PHTHALOCYANINE OR "29H,31H-PHTHALOCYANINE" OR "PORPHYRINS")
L13          3028 S L12/PREP
L14          7 S L13 AND METAL-CONTAINING
              SET LINE 250
              SET DETAIL OFF
              E PHTHALONITRILE+ALL/CT
              SET LINE LOGIN
              SET DETAIL LOGIN
L15          26 S L13 AND (PHTHALONITRILE OR "1,2-BENZENEDICARBONITRILE" OR "1,
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              SET LINE LOGIN
              SET DETAIL LOGIN
L16          0 S L13 AND (PHTHALONITRILE OR "1,2-BENZENEDICARBONITRILE" OR "1,
L17          40 S L13 AND ALKOXY
L18          4 S L15 AND ALKOXY

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      SET DETAIL LOGIN

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Executing the logoff script...

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INDEX 'AGRICOLA, ALUMINIUM, ANABSTR, APOLLIT, AQUALINE, AQUIRE, BABS, BIOTECHNO, CABA, CAPLUS, CBNB, CEABA-VTB, CERAB, CIN, COMPENDEX, CONFSCI, COPPERLIT, CORROSION, DISSABS, ENCOMPLIT, GENBANK, INSPEC, INSPHYS, IPA, KOSMET, METADEX, NAPRALERT, NTIS, ...' ENTERED AT 13:20:51 ON 19 DEC 2008

FILE 'REGISTRY' ENTERED AT 13:21:06 ON 19 DEC 2008

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      E PHTHALOCYANINE/CN
L1          1 SEA SPE=ON  ABB=ON  PLU=ON  PHTHALOCYANINE/CN
      D SCAN

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FILE 'CAPLUS' ENTERED AT 13:22:37 ON 19 DEC 2008

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L2          8782 SEA SPE=ON  ABB=ON  PLU=ON  L1

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FILE 'REGISTRY' ENTERED AT 13:24:15 ON 19 DEC 2008

D L1 1 IDE

FILE 'CAPLUS' ENTERED AT 13:24:33 ON 19 DEC 2008

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L3          3519 SEA SPE=ON  ABB=ON  PLU=ON  L1 AND METAL

```

L4 0 SEA SPE=ON ABB=ON PLU=ON (L1 AND METAL/PREP)
 L5 998 SEA SPE=ON ABB=ON PLU=ON L1/PREP
 L6 156 SEA SPE=ON ABB=ON PLU=ON L5 AND PHTHALONITRILE
 L7 25 SEA SPE=ON ABB=ON PLU=ON L5 AND ALKOXY
 L8 79 SEA SPE=ON ABB=ON PLU=ON L1 AND METAL-CONTAINING
 L9 0 SEA SPE=ON ABB=ON PLU=ON (L1 AND METAL-CONTAINING/PREP)
 L10 6 SEA SPE=ON ABB=ON PLU=ON L8 AND PHTHALONITRILE
 SET LINE 250
 SET DETAIL OFF
 E PHTHALONITRILE+ALL/CT
 SET LINE LOGIN
 SET DETAIL LOGIN
 L11 7 SEA SPE=ON ABB=ON PLU=ON L8 AND (PHTHALONITRILE OR "1,2-BENZ
 ENEDICARBONITRILE" OR "1,2-DICYANO BENZENE" OR "PHTHALODINITRILE
 ")
 D IBIB HIT HITSTR
 D 2-6 IBIB HIT HITSTR
 SET LINE 250
 SET DETAIL OFF
 E PHTHALOCYANINE+ALL/CT
 SET LINE LOGIN
 SET DETAIL LOGIN
 L12 66550 SEA SPE=ON ABB=ON PLU=ON (PHTHALOCYANINE OR "29H,31H-PHTHALO
 CYANINE" OR "PORPHYRINS")
 L13 3028 SEA SPE=ON ABB=ON PLU=ON ((PHTHALOCYANINE/PREP OR "29H,31H-P
 HTHALOCYANINE"/PREP OR "PORPHYRINS"/PREP))
 L14 7 SEA SPE=ON ABB=ON PLU=ON L13 AND METAL-CONTAINING
 SET LINE 250
 SET DETAIL OFF
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 SET LINE LOGIN
 SET DETAIL LOGIN
 L15 26 SEA SPE=ON ABB=ON PLU=ON L13 AND (PHTHALONITRILE OR
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 "PHTHALODINITRILE")
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 L16 0 SEA SPE=ON ABB=ON PLU=ON L13 AND (PHTHALONITRILE OR
 "1,2-BENZENEDICARBONITRILE" OR "1,2-DICYANO BENZENE" OR
 "PHTHALODINITRILE")/RACT
 L17 40 SEA SPE=ON ABB=ON PLU=ON L13 AND ALKOXY
 L18 4 SEA SPE=ON ABB=ON PLU=ON L15 AND ALKOXY
 D 1-4 IBIB HIT HITSTR ABS

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NEWS	5	OCT 22	Current-awareness alert (SDI) setup and editing enhanced
NEWS	6	OCT 22	WPIDS, WPINDEX, and WPIX enhanced with Canadian PCT Applications
NEWS	7	OCT 24	CHEMLIST enhanced with intermediate list of pre-registered REACH substances
NEWS	8	NOV 21	CAS patent coverage to include exemplified prophetic substances identified in English-, French-, German-, and Japanese-language basic patents from 2004-present
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